

CLAIMS

1           1. A nucleic acid construct for genetic immunization comprising  
2               (a) an antigen-coding region encoding an antigenic protein or  
3 peptide; and  
4               (b) a sorting region encoding a protein or peptide which acts as a  
5 sorting signal to direct intracellular transport of the protein or peptide to the endosomes or the  
6 endoplasmic reticulum of a cell.

1           2. The construct of claim 1, further comprising a linker region disposed  
2 between the antigen-coding region and the sorting region.

1           3. The construct according to claim 1 or 2, wherein the sorting region is  
2 derived from the human brown locus protein, gp75; human albino locus protein, tyrosinase;  
3 human silver locus protein, Pmel 17; or human pink eyed locus P-protein.

1           4. The construct according to claim 1 or 2, wherein the sorting region  
2 encodes at least the peptide Glu Ala Asn Gln Pro Leu Leu Thr Asp (SEQ ID NO. 1).

1           5. The construct according to claim 1 or 2, wherein the sorting region  
2 encodes at least the peptide Glu Glu Lys Gln Pro Leu Leu Met Asp (SEQ ID NO. 2).

1           6. The construct according to claim 1 or 2, wherein the sorting region  
2 encodes at least the peptide Glu Asp Ser Pro Leu Leu (SEQ ID NO. 3).

1           7. The construct according to claim 1 or 2, wherein the sorting region  
2 encodes at least the peptide Glu Asp Thr Pro Leu Leu (SEQ ID NO. 4).

1           8. The construct according to claim 1 or 2, wherein the sorting region  
2 encodes at least the peptide sequence Pro Ser Arg Asp Arg Ser Arg His Asp Lys Ile His (SEQ  
3 ID NO. 5).

1               9.     The construct according to claim 1 or 2, wherein the sorting region is a  
2     mutant form in which a glycosylation site present in a corresponding wild type sorting region  
3     has been altered.

1               10.    The construct according to any of claims 1 to 9, further comprising a  
2     promoter region effective to permit expression of the construct in mammalian cells.

1               11.    The construct according to claim 10, wherein the promoter region is  
2     selected from among the SV40 promoter, the CMV promoter and the RSV promoter.

1               12.    A vaccine for genetic immunization comprising a nucleic acid construct  
2     according to any of claims 1 to 11.

1               13.    The vaccine according to claim 12, wherein the nucleic acid construct  
2     is packaged in a liposome.

1               14.    The vaccine according to claim 12, wherein the nucleic acid construct  
2     is coated on a colloidal gold particle.

1               15.    The vaccine according to claim 12, wherein the nucleic acid construct  
2     is incorporated into a viral expression vector.

1               16.    A method for inducing an immune response to an antigen in a mammal,  
2     comprising the step of administering to the mammal a nucleic acid construct or vaccine  
3     according to any of claims 1-15.

1               17.    A method for preparing a vaccine for genetic immunization comprising  
2     the step preparing a nucleic acid construct according to any of claims 1 to 11.

1               18.    The method according to claim 17, further comprising the step of  
2     packaging the nucleic acid construct in a liposome carrier.

1               19. The method according to claim 17, further comprising the step of  
2 coating the nucleic acid construct on a colloidal gold particle.

1               20. The method according to claim 17, wherein the nucleic acid construct  
2 is incorporated into a viral expression vector.